**Print statement, comments and variables**

1. Print(“”)
2. One line comment #
3. Multiline comment “”” (three, three single quotes on both ends)
4. Ctrl and / for comment and uncomment
5. Print (“First Part” , “Second Part”)
6. For two print statements in one line, print (“one line”, end = “ ”)
7. Escape characters are special characters that can be embedded in a string.
   1. \ is used to ignore something.
   2. \n for new line
   3. \t for tab
8. No need to declare the type of variables
9. To find out the type of a particular variable var1…..print(type(var1))
10. An integer variable can be added into a float variable
11. Two strings can be concatenated simply by +.
12. When a number is give in “”, it will be treated as a string.
13. Type casting means to change the type of a particular variable, e.g string to int.

Var1 = “45”

Var2 = “45”

Print (int(var1) + int(var2)) str(), float().

1. For printing multiple times, print (10 \* “Hello World\n”)

Print (10 \* str(int(var1) + int(var2))) #convert the sum of two values into a string and print it ten times.

**Taking input from user**

1. How to take input from user

Print (“Enter the number”)

Num1 = input() # input() will always store value as a string.

Print(“You entered” , Num1)

**String functions**

1. Mystr = Harry

Print(mystr[1]) # it will print a

Print(mystr[0:5]) # it will print harry

Print(len(mystr)) # it will print 5

Print(mystr[78]) #it will give error

Print(mystr[0:78]) # it will print harry

Print(mystr[0:]) # it will print harry

Print(mystr[:5]) # it will print harry

Print(mystr[0:5:2]) # it will print hry known as step argument

Print(mystr[ : ]) # it will print harry

Print(mystr[ : : ]) # it will print harry # 0,total length,1 are by default values

Print(mystr[ : : -1]) # it will print yrrah, will reverse the string

1. Print(Mystr.isalnum()) # return true if no spaces, return false if there are spaces.
2. Print(Mystr.endswith(“boy”)) # returns true if mystr is ending with “boy”.
3. Print(Mystr.count(“b”)) # returns the total number of b in string.
4. Print(Mystr.capitalize()) # will capitalize very first letter
5. Print(Mystr.find(“is”)) # returns the index from where “is” is starting
6. Print(Mystr.lower()) # Coverts full string to lower case
7. Print(Mystr.upper()) # Coverts full string to upper case
8. Print(Mystr.replace(“is” , “are”) ) # will replace “is” with “are”

**Lists in python**

1. Grocery = [“soap” , “shampoo” , “surf” , “35”]
2. Print(grocery[1]) # it will print shampoo
3. Numbers = [2,3,4,5,6,7]
4. Print(numbers) # all numbers will be printed
5. Print(len(numbers)) #lenght of list
6. Print(max(numbers)) # biggest number of list
7. Print(min(numbers)) #smallest number in list
8. Numbers.sort()
9. Numbers.reverse()
10. Numbers.append(7) # will append 7 at the end of list
11. Numbers.insert(1,11) # will insert 11 at index 1
12. Numbers.remove(6) # it will remove 1 from list
13. Numbers.pop() # will remove 7 from the list
14. Numbers[1] = 98 # will replace 3 with 98

**Tuple**

1. List is mutable (can be changed), while tuple is immutable (cannot be changed).
2. Tp = (1,2,3)
3. Tp[1] = 8 # error will be generated
4. If u want to make a tuple of only one element the tp = (1,)

**Swapping**

If u want to swap values of a and b write a , b = b , a

**Dictionary**

1. Dictionary is a key-value pair # key is the word, value is the meaning
2. Value can be a list or a dictionary itself.
3. D1= {} # it will create a blank dictionary
4. Print(type(d1)) # it will print class dict
5. D1={“harry”: “burger” , “ahmad” : “fish” , “ali” : “egg”}
6. Print(d1) # complete dictionary will be printed
7. Print (d1[“harry”]) # it will print burger
8. D1={“harry”: “burger” , “ahmad” : “fish” , “ali” : {“B”: “milk” , “L”: “egg” , “D”: “chicken”}}
9. Print (d1[“ali”]) # it will print complete dictionary of ali
10. Print (d1[ “ali” ] [ “B” ]) # it will print milk
11. D1[“hassan”] = “fish” # hassan will be added at the end of d1.
12. Del d1[“hassan”] # it will delete hassan
13. D2 = d1 # d2 will point at d1 and changes made to d2 will also be done in d1
14. D2 = d1.copy() #a new copy of d1 will be created and d2 will point to that new copy, changes in d2 will not affect d1.
15. Print(d1.keys()) # all keys will be printed
16. Print(d1.items()) # all key-value pairs will be printed

**Sets**

1. Main difference from list is that set will contain only unique numbers (no repetition).
2. S = set( )
3. L = [1,2,3,4,5]
4. s = set(L) # another way to make set from a list
5. S.add(1) # it will add 1 to the empty set S
6. S.remove(3) #it will remove 3 from set S
7. s.union( {1,2,3} ) # will take union of s and {1,2,3}
8. s.intersection()
9. print(len(s)), print (type(s)), print( min(s)), print(max(s))